

In the Claims

1. (Currently Amended) A method comprising:
identifying a plurality of secondary nodes, wherein
the identifying comprises sending an update from a primary node to the plurality of secondary nodes, and
at least one secondary node of the plurality of secondary nodes inserts the update in a respective log of updates, and each of the respective log of updates corresponds to a respective copy of the data; **and**
determining that all of the plurality of secondary nodes have acknowledged the update; and
sending a notification to each of the plurality of secondary nodes once all of the plurality of secondary nodes have acknowledged the update.
2. (Previously Presented) The method of claim 1 wherein
each secondary node of the at least one secondary node clears the update from the respective log of updates in response to receiving the notification.
3. (Previously Presented) The method of claim 2 wherein
clearing the update from the respective log comprises updating a start-of-log pointer in the respective log.
4. (Previously Presented) The method of claim 2 wherein
the clearing the update from the respective log comprises updating a pointer to a location in the respective log, wherein
the pointer points to the location if the location contains a next update to clear.
5. (Previously Presented) The method of claim 1 further comprising:
determining that a location of a next update in a first respective log of updates to a first respective copy of the data at a first secondary node of the secondary nodes differs from a corresponding location of the next update in a second respective log of updates to a second respective copy of the data at a second secondary node of the secondary nodes; and

identifying a set of updates in the first respective log, wherein each update of the set of updates is not in the second respective log; and synchronizing the first respective copy and the second respective copy by applying the set of updates to the second respective copy.

6. (Previously Presented) The method of claim 5 wherein the determining occurs when a primary node maintaining the data fails.
7. (Previously Presented) The method of claim 1 further comprising: setting a sent indicator for the update for one of the plurality of secondary nodes when the update is sent to the one secondary node.
8. (Previously Presented) The method of claim 7 further comprising: setting a received indicator for the update for the one secondary node when an acknowledgement of the update is received from the one secondary node.
9. (Previously Presented) The method of claim 8 wherein the sending the notification to each of the plurality of secondary nodes comprises determining that a respective sent indicator and a respective received indicator for the update are set for each of the plurality of secondary nodes.

10.-17. (Cancelled)

18. (Currently Amended) A computer-readable storage medium having a plurality of instructions embodied therein, wherein said plurality of instructions are executable for:
identifying instructions to identify a plurality of secondary nodes, wherein
said identifying comprises sending an update from a primary node to said
plurality of secondary nodes, and
at least one secondary node of the plurality of secondary nodes inserts the update
in a respective log of updates , and each of the respective log of updates
corresponds to a respective copy of the data; and
determining that all of the plurality of secondary nodes have acknowledged the update; and
sending instructions to send a notification to each of the plurality of secondary nodes

once all of the plurality of secondary nodes have acknowledged the update.

19. (Previously Presented) The computer-readable storage medium of claim 18 further comprising:

clearing instructions to clear the update from the respective log of updates in response to receiving the notification.

20. (Previously Presented) The computer-readable storage medium of claim 19 wherein the clearing instructions further comprise updating instructions to update a start-of-log pointer in the respective log.

21. (Previously Presented) The computer-readable storage medium of claim 19 wherein the clearing instructions further comprise updating instructions to update a pointer to a location in the respective log, wherein the pointer points to the location if the location contains a next update to clear.

22. (Previously Presented) The computer-readable storage medium of claim 18 further comprising:

determining instructions to determine that a location of a next update in a first respective log of updates to a first respective copy of the data at a first secondary node of the secondary nodes differs from a corresponding location of the next update in a second respective log of updates to a second respective copy of the data at a second secondary node of the secondary nodes; and

second identifying instructions to identify a set of updates in the first respective log, wherein

each update of the set of updates is not in the second respective log; and

synchronizing instructions to synchronize the first respective copy and the second respective copy by applying the set of updates to the second respective copy.

23. (Currently Amended) A computer system comprising:

a processor for executing instructions, and

a memory to store the instructions, wherein the instructions comprise

identifying instructions to identify a plurality of secondary nodes to which an

update to data is sent from a primary node, wherein
at least one secondary node of the plurality of secondary nodes inserts the
update in a respective log of updates to a respective copy of the
data; **and**

**determining that all of the plurality of secondary nodes have acknowledged
the update; and**

sending instructions to send a notification to each of the plurality of secondary nodes
when all of the plurality of secondary nodes have acknowledged the update.

24. (Previously Presented) The computer system of claim 23 wherein
the instructions further comprise:
clearing instructions to clear the update from the respective log of updates in response to
receiving the notification.
25. (Previously Presented) The computer system of claim 23 wherein
the instructions further comprise
determining instructions to determine that a location of a next update in a first respective
log of updates to a first respective copy of the data at a first secondary node of the
secondary nodes differs from a corresponding location of the next update in a
second respective log of updates to a second respective copy of the data at a
second secondary node of the secondary nodes; and
second identifying instructions to identify a set of updates in the first respective log,
wherein
each update of the set of updates is not in the second respective log; and
synchronizing instructions to synchronize the first respective copy and the second
respective copy by applying the set of updates to the second respective copy.
26. (New) The method of claim 1, further comprising:
in response to the identifying, incrementing a regional counter stored on the primary node
by a number of secondary nodes to which the update is sent, wherein
the regional counter is a number of secondary nodes from which an
acknowledgement to the update is to be received;

in response to receiving an acknowledgement from a secondary node among the plurality of secondary nodes to which the update is sent, decrementing the regional counter; and

in response to the regional counter reaching a value prior to the incrementing, determining that each of the plurality of secondary nodes has acknowledged the update.

27. (New) The computer-readable storage medium of Claim 18, further comprising:
incrementing instructions to increment a regional counter stored on the primary node by a number of secondary nodes to which the update is sent, in response to the identifying, wherein
the regional counter is a number of secondary nodes from which an acknowledgement to the update has not been received;
decrementing instructions to decrement the regional counter, in response to receiving an acknowledgement from a secondary node among the plurality of secondary nodes to which the update is sent; and
determining instructions to determine that each of the plurality of secondary nodes has acknowledged the update.

28. (New) The computer system of Claim 23, wherein the instructions further comprise:
incrementing instructions to increment a regional counter stored on the primary node by a number of secondary nodes to which the update is sent, in response to the identifying, wherein
the regional counter is a number of secondary nodes from which an acknowledgement to the update has not been received;
decrementing instructions to decrement the regional counter, in response to receiving an acknowledgement from a secondary node among the plurality of secondary nodes to which the update is sent; and
determining instructions to determine that each of the plurality of secondary nodes has acknowledged the update.